Estimates of the summary AUC under three settings of (c_1, c_2)

$(\tau_1^2, \tau_2^2) = (0.5, 0.5)$

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Table 1: Summary of the SAUC estimates under the true selective publication mechanism of $(c_1, c_2) = (1/\sqrt{2}, 1/\sqrt{2})$

			$S = 15$	$S = 25$	$S = 50$	$S = 200$
No.	Methods	True	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)
1	Prop $(\hat{c}_1, \hat{c}_2)$	62.0	4.1 (45.2, 77.2)	2.3 (50.7, 74.1)	0.6 (52.0, 70.4)	-0.2 (55.9, 65.9)
	Prop $(c_1 = c_2)$		3.9 (42.5, 76.6)	2.4 (51.5, 74.3)	1.3 (53.9, 70.6)	0.2 (57.2, 66.0)
	Prop $(c_1 = 0)$		7.4 (51.1, 78.3)	7.5 (59.8, 76.3)	7.2 (63.5, 73.9)	6.5 (65.7, 70.7)
	Heckman-type		5.6 (52.1, 76.7)	6.4 (57.9, 74.4)	4.8 (60.3, 71.9)	4.5 (62.9, 69.3)
	Reistma$_O$		7.9 (53.6, 78.7)	7.8 (61.1, 76.6)	7.4 (64.1, 74.3)	7.1 (66.3, 71.2)
	Reistma$_P$		1.3 (48.5, 73.0)	0.3 (53.7, 69.6)	0.1 (56.5, 67.1)	-0.1 (59.1, 64.6)
2	Prop $(\hat{c}_1, \hat{c}_2)$	70.2	2.3 (61.2, 78.9)	0.9 (62.5, 76.3)	1.0 (65.3, 75.1)	0.1 (67.7, 72.4)
	Prop $(c_1 = c_2)$		1.9 (59.7, 78.6)	0.8 (62.7, 76.6)	0.8 (65.3, 75.1)	0.1 (67.9, 72.3)
	Prop $(c_1 = 0)$		3.9 (65.9, 79.8)	3.2 (67.8, 77.9)	3.4 (70.4, 76.7)	3.3 (71.9, 75.2)
	Heckman-type		2.3 (63.6, 78.0)	1.7 (64.6, 76.3)	1.7 (67.2, 75.2)	1.5 (69.6, 73.6)
	Reistma$_O$		4.2 (66.5, 79.9)	3.5 (68.8, 78.1)	3.9 (70.7, 77.0)	3.7 (72.3, 75.2)
	Reistma$_P$		1.4 (63.5, 76.9)	0.3 (64.7, 74.7)	0.1 (66.8, 73.4)	-0.0 (68.5, 71.7)
3	Prop $(\hat{c}_1, \hat{c}_2)$	84.6	-0.5 (77.9, 87.5)	-0.0 (79.7, 87.2)	-0.0 (81.5, 86.6)	0.1 (83.3, 85.9)
	Prop $(c_1 = c_2)$		-0.8 (76.7, 87.3)	-0.1 (79.1, 87.1)	0.0 (81.4, 86.7)	0.1 (83.2, 85.8)
	Prop $(c_1 = 0)$		-0.2 (78.6, 87.7)	0.5 (81.0, 87.4)	0.9 (83.3, 87.1)	1.2 (84.6, 86.8)
	Heckman-type		0.2 (79.4, 87.9)	0.9 (82.1, 87.5)	1.5 (83.9, 87.5)	1.6 (85.1, 87.0)
	Reistma$_O$		0.8 (80.3, 88.4)	1.6 (83.2, 88.2)	2.1 (84.8, 88.1)	2.3 (85.9, 87.6)
	Reistma$_P$		-1.1 (78.1, 86.4)	-0.5 (80.7, 86.5)	-0.2 (82.5, 86.0)	-0.0 (83.7, 85.5)
4	Prop $(\hat{c}_1, \hat{c}_2)$	86.4	-0.5 (82.8, 87.9)	-0.2 (84.2, 87.8)	-0.0 (85.1, 87.4)	0.0 (85.9, 87.0)
	Prop $(c_1 = c_2)$		-0.5 (82.3, 87.8)	-0.1 (84.2, 87.8)	-0.0 (85.1, 87.5)	0.0 (85.9, 87.0)
	Prop $(c_1 = 0)$		-0.2 (83.3, 88.0)	0.0 (84.6, 88.0)	0.4 (85.6, 87.7)	0.5 (86.4, 87.5)
	Heckman-type		-0.1 (83.2, 88.0)	0.1 (84.8, 88.0)	0.4 (85.6, 87.7)	0.5 (86.4, 87.4)
	Reistma$_O$		0.5 (84.4, 88.6)	0.9 (85.8, 88.5)	1.2 (86.6, 88.4)	1.3 (87.3, 88.1)
	Reistma$_P$		-0.7 (83.6, 87.5)	-0.3 (84.5, 87.5)	-0.1 (85.2, 87.2)	-0.0 (85.9, 86.8)
5	Prop $(\hat{c}_1, \hat{c}_2)$	87.7	-2.0 (79.5, 89.4)	-1.0 (82.5, 89.4)	-0.1 (84.9, 89.4)	0.1 (86.5, 88.8)
	Prop $(c_1 = c_2)$		-2.3 (78.8, 89.3)	-1.2 (82.6, 89.4)	-0.3 (85.1, 89.3)	-0.1 (86.6, 88.7)
	Prop $(c_1 = 0)$		-3.2 (77.2, 88.9)	-2.1 (80.8, 89.1)	-1.4 (83.5, 88.7)	-0.9 (85.5, 88.0)
	Heckman-type		-1.8 (80.0, 89.6)	-1.1 (82.5, 89.6)	-0.6 (84.8, 89.5)	-0.2 (86.3, 88.7)
	Reistma$_O$		-1.7 (79.1, 89.8)	-0.7 (83.0, 89.9)	-0.1 (85.4, 89.8)	0.3 (87.0, 89.1)
	Reistma$_P$		-1.7 (80.9, 89.2)	-0.5 (83.8, 89.3)	-0.3 (85.5, 89.1)	0.0 (86.7, 88.5)
6	Prop $(\hat{c}_1, \hat{c}_2)$	83.5	-0.9 (76.0, 87.2)	0.3 (79.0, 87.4)	0.4 (81.1, 86.8)	0.2 (82.2, 85.3)
	Prop $(c_1 = c_2)$		-1.3 (76.0, 86.9)	0.1 (79.3, 87.1)	0.2 (80.8, 86.5)	-0.0 (82.1, 84.8)
	Prop $(c_1 = 0)$		-2.5 (74.6, 86.3)	-1.3 (77.7, 86.1)	-0.9 (79.8, 85.5)	-0.7 (81.5, 84.2)
	Heckman-type		-1.0 (76.7, 87.1)	0.2 (79.5, 86.7)	-0.0 (80.6, 86.3)	-0.1 (82.2, 84.9)
	Reistma$_O$		-1.0 (76.9, 87.1)	0.4 (80.1, 87.1)	0.5 (81.5, 86.6)	0.7 (82.9, 85.4)
	Reistma$_P$		-1.0 (76.8, 86.7)	-0.2 (79.6, 86.5)	-0.2 (80.8, 85.7)	-0.1 (82.2, 84.5)

Note:
Median with 25th empirical quartile (Q1) and 75th empirical quartile (Q3) and convergence rate (CR) are reported. No. denotes the senario numbers. S denotes the number of the population studies; True denotes the the true value of the SAUC. Prop $(hatc_1, hatc_2)$, Prop $(c_1 = c_2)$, and Prop $(c_1 = 1)$ denote the proposed method that estimates (c_1, c_2), correctly specifies $(c_1, c_2) = (1/sqrt2, 1/sqrt2)$, and misspecifies $(c_1, c_2) = (1, 0)$, respectively; Heckman-type denotes the method of Piao et al.; Reitsma$_O$ and Reitsma$_P$ denote the Reitsma model based on N observed studies and$S$ population studies, respectively. All the entries are multiplied by 100.

Table 2: Summary of the SAUC estimates under the true selective publication mechanism of $(c_1, c_2) = (1, 0)$

			$S = 15$	$S = 25$	$S = 50$	$S = 200$
No.		True	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)
1	Prop $(\hat{c}_1, \hat{c}_2)$	62.0	-0.3 (46.3, 74.5)	0.8 (49.7, 71.4)	-0.3 (52.7, 68.8)	0.3 (57.6, 65.6)
	Prop $(c_1 = 1)$		2.3 (47.1, 75.2)	2.8 (51.3, 73.1)	0.7 (54.9, 69.9)	0.3 (57.9, 65.5)
	Prop $(c_1 = c_2)$		0.2 (48.0, 74.5)	0.9 (51.3, 72.0)	1.9 (56.4, 70.1)	3.3 (62.1, 68.0)
	Heckman-type		-0.7 (48.4, 71.9)	0.4 (51.7, 69.9)	-1.2 (53.8, 66.8)	-2.1 (55.4, 63.4)
	Reistma$_O$		4.3 (51.9, 75.6)	4.7 (56.4, 73.9)	4.1 (60.8, 71.4)	4.0 (63.0, 68.6)
	Reistma$_P$		1.3 (48.5, 73.0)	0.3 (53.7, 69.6)	0.1 (56.5, 67.1)	-0.1 (59.1, 64.6)
2	Prop $(\hat{c}_1, \hat{c}_2)$	70.2	-0.6 (57.4, 77.2)	-0.5 (60.0, 75.3)	-0.2 (63.9, 74.0)	-0.0 (68.1, 72.1)
	Prop $(c_1 = 1)$		1.1 (59.0, 77.9)	1.0 (63.0, 75.9)	0.9 (65.9, 74.8)	0.2 (68.3, 72.1)
	Prop $(c_1 = c_2)$		-0.8 (57.3, 77.1)	-0.7 (60.3, 75.0)	0.2 (64.7, 74.5)	1.1 (69.1, 72.9)
	Heckman-type		-2.9 (55.9, 74.8)	-3.3 (58.0, 72.8)	-3.0 (59.7, 71.7)	-4.3 (61.7, 69.1)
	Reistma$_O$		1.4 (61.6, 78.0)	1.5 (65.5, 76.0)	1.7 (67.7, 75.2)	1.5 (70.0, 73.3)
	Reistma$_P$		1.4 (63.5, 76.9)	0.3 (64.7, 74.7)	0.1 (66.8, 73.4)	-0.0 (68.5, 71.7)
3	Prop $(\hat{c}_1, \hat{c}_2)$	84.6	-1.7 (74.5, 86.7)	-0.7 (78.8, 86.6)	-0.5 (80.4, 86.3)	-0.2 (83.0, 85.5)
	Prop $(c_1 = 1)$		-1.6 (75.4, 86.9)	-0.2 (80.2, 86.9)	-0.2 (81.2, 86.5)	-0.0 (83.4, 85.7)
	Prop $(c_1 = c_2)$		-1.7 (74.1, 87.0)	-0.5 (79.2, 86.8)	-0.2 (81.0, 86.6)	0.3 (83.5, 86.0)
	Heckman-type		-1.3 (77.2, 87.2)	0.2 (80.9, 87.0)	0.4 (82.3, 86.8)	0.7 (84.1, 86.3)
	Reistma$_O$		-0.3 (77.8, 87.7)	1.1 (82.2, 87.7)	1.4 (83.6, 87.7)	1.7 (85.3, 87.1)
	Reistma$_P$		-1.1 (78.1, 86.4)	-0.5 (80.7, 86.5)	-0.2 (82.5, 86.0)	-0.0 (83.7, 85.5)
4	Prop $(\hat{c}_1, \hat{c}_2)$	86.4	-1.1 (81.7, 87.7)	-0.5 (83.6, 87.6)	-0.3 (84.8, 87.3)	-0.0 (85.8, 86.9)
	Prop $(c_1 = 1)$		-1.0 (82.2, 87.8)	-0.3 (83.9, 87.7)	-0.1 (85.0, 87.4)	0.0 (85.9, 87.0)
	Prop $(c_1 = c_2)$		-0.9 (81.7, 87.6)	-0.3 (83.8, 87.8)	0.1 (85.2, 87.7)	0.3 (86.1, 87.3)
	Heckman-type		-0.9 (81.6, 87.5)	-0.5 (83.7, 87.6)	-0.0 (84.8, 87.4)	-0.0 (85.6, 87.0)
	Reistma$_O$		-0.1 (83.6, 88.3)	0.6 (85.1, 88.4)	0.9 (86.4, 88.3)	1.2 (87.1, 88.0)
	Reistma$_P$		-0.7 (83.6, 87.5)	-0.3 (84.5, 87.5)	-0.1 (85.2, 87.2)	-0.0 (85.9, 86.8)
5	Prop $(\hat{c}_1, \hat{c}_2)$	87.7	-1.6 (78.5, 89.7)	-0.3 (83.4, 90.0)	0.3 (85.5, 89.7)	0.2 (86.8, 89.0)
	Prop $(c_1 = 1)$		-2.3 (77.8, 89.3)	-0.9 (82.3, 89.7)	0.1 (85.1, 89.5)	-0.0 (86.5, 88.8)
	Prop $(c_1 = c_2)$		-1.0 (79.8, 90.0)	0.7 (85.0, 90.5)	1.3 (87.1, 90.3)	1.4 (88.3, 89.8)
	Heckman-type		-0.3 (81.5, 90.6)	1.1 (85.1, 90.9)	1.6 (87.0, 90.6)	1.6 (88.3, 90.2)
	Reistma$_O$		-0.9 (79.4, 90.3)	0.8 (84.7, 90.8)	1.5 (86.9, 90.7)	1.6 (88.4, 90.1)
	Reistma$_P$		-1.7 (80.9, 89.2)	-0.5 (83.8, 89.3)	-0.3 (85.5, 89.1)	0.0 (86.7, 88.5)
6	Prop $(\hat{c}_1, \hat{c}_2)$	83.5	-1.1 (75.2, 87.8)	0.5 (78.8, 87.9)	0.7 (80.9, 86.9)	0.1 (82.1, 85.0)
	Prop $(c_1 = 1)$		-1.8 (74.6, 86.9)	0.0 (78.4, 87.3)	0.1 (80.5, 86.3)	-0.0 (82.0, 84.8)
	Prop $(c_1 = c_2)$		0.2 (76.5, 88.3)	1.5 (80.5, 88.4)	2.0 (82.4, 87.9)	1.7 (83.8, 86.4)
	Heckman-type		1.0 (78.0, 88.8)	1.8 (80.5, 88.6)	2.2 (82.8, 88.3)	2.2 (84.3, 87.1)
	Reistma$_O$		-0.5 (76.2, 88.1)	1.4 (80.3, 88.2)	1.8 (82.3, 87.7)	1.8 (84.0, 86.5)
	Reistma$_P$		-1.0 (76.8, 86.7)	-0.2 (79.6, 86.5)	-0.2 (80.8, 85.7)	-0.1 (82.2, 84.5)

Note:
Median with 25th empirical quartile (Q1) and 75th empirical quartile (Q3) and convergence rate (CR) are reported. No. denotes the senario numbers. S denotes the number of the population studies; True denotes the the true value of the SAUC. Prop $(hatc_1, hatc_2)$, Prop $(c_1 = 1)$, and Prop $(c_1 = c_2)$ denote the proposed method that estimates (c_1, c_2), correctly specifies $(c_1, c_2) = (1, 0)$, and misspecifies $(c_1, c_2) = (1/sqrt2, 1/sqrt2)$, respectively; Heckman-type denotes the method of Piao et al.; Reitsma$_O$ and Reitsma$_P$ denote the Reitsma model based on N observed studies and$S$ population studies, respectively. All the entries are multiplied by 100.

Table 3: Summary of the SAUC estimates under the true selective publication mechanism of $(c_1, c_2) = (0, 1)$

			$S = 15$	$S = 25$	$S = 50$	$S = 200$
No.		True	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)
1	Prop $(\hat{c}_1, \hat{c}_2)$	62.0	-4.7 (36.2, 73.0)	-3.7 (42.7, 69.8)	-4.0 (47.2, 66.3)	-2.4 (54.8, 63.7)
	Prop $(c_1 = 0)$		0.3 (41.4, 74.4)	0.7 (51.5, 72.3)	0.5 (54.7, 68.7)	-0.1 (57.8, 65.2)
	Prop $(c_1 = c_2)$		-7.1 (32.1, 72.3)	-7.7 (38.3, 68.6)	-6.6 (42.2, 64.1)	-7.3 (49.1, 60.1)
	Heckman-type		-2.4 (39.4, 73.0)	-1.8 (46.0, 70.6)	-1.9 (49.7, 67.4)	-2.7 (54.5, 63.5)
	Reistma$_O$		0.7 (40.8, 75.2)	1.6 (51.2, 73.1)	0.8 (55.2, 69.3)	0.4 (58.3, 65.8)
	Reistma$_P$		1.3 (48.5, 73.0)	0.3 (53.7, 69.6)	0.1 (56.5, 67.1)	-0.1 (59.1, 64.6)
2	Prop $(\hat{c}_1, \hat{c}_2)$	70.2	0.0 (53.2, 78.2)	-2.3 (54.9, 75.1)	-1.5 (61.7, 73.4)	-1.1 (66.5, 71.4)
	Prop $(c_1 = 0)$		1.0 (59.2, 78.9)	-0.2 (61.2, 75.8)	0.4 (65.8, 74.4)	-0.0 (68.1, 72.1)
	Prop $(c_1 = c_2)$		-1.1 (48.7, 78.0)	-3.4 (51.2, 75.2)	-2.2 (60.1, 73.2)	-3.1 (63.9, 70.1)
	Heckman-type		-0.3 (55.7, 77.7)	-2.2 (57.8, 74.4)	-1.5 (62.3, 73.1)	-1.6 (65.3, 71.0)
	Reistma$_O$		2.0 (59.3, 79.3)	0.4 (61.5, 76.5)	1.1 (66.6, 75.1)	0.6 (68.8, 72.8)
	Reistma$_P$		1.4 (63.5, 76.9)	0.3 (64.7, 74.7)	0.1 (66.8, 73.4)	-0.0 (68.5, 71.7)
3	Prop $(\hat{c}_1, \hat{c}_2)$	84.6	-2.4 (70.0, 86.7)	-1.7 (75.2, 86.6)	-1.0 (78.9, 86.1)	-0.5 (82.4, 85.4)
	Prop $(c_1 = 0)$		-1.4 (74.0, 87.2)	-0.6 (78.3, 87.1)	0.0 (81.4, 86.7)	-0.1 (83.3, 85.7)
	Prop $(c_1 = c_2)$		-3.0 (68.0, 86.4)	-2.1 (74.1, 86.5)	-1.7 (77.9, 85.8)	-1.6 (80.8, 84.8)
	Heckman-type		-2.5 (71.2, 86.4)	-1.7 (75.3, 86.2)	-1.3 (78.8, 85.9)	-1.4 (81.1, 84.8)
	Reistma$_O$		-1.1 (73.8, 87.6)	-0.1 (78.3, 87.4)	0.4 (81.6, 87.0)	0.3 (83.6, 86.1)
	Reistma$_P$		-1.1 (78.1, 86.4)	-0.5 (80.7, 86.5)	-0.2 (82.5, 86.0)	-0.0 (83.7, 85.5)
4	Prop $(\hat{c}_1, \hat{c}_2)$	86.4	-1.4 (80.8, 87.6)	-0.8 (82.6, 87.4)	-0.7 (84.0, 87.1)	-0.3 (85.4, 86.8)
	Prop $(c_1 = 0)$		-0.9 (82.0, 87.9)	-0.3 (83.7, 87.7)	-0.1 (84.8, 87.4)	-0.0 (85.8, 87.0)
	Prop $(c_1 = c_2)$		-1.5 (79.6, 87.5)	-1.1 (82.2, 87.3)	-0.9 (83.5, 87.1)	-0.6 (84.9, 86.5)
	Heckman-type		-1.5 (80.1, 87.1)	-1.2 (81.7, 87.1)	-1.1 (83.1, 86.8)	-1.0 (84.5, 86.2)
	Reistma$_O$		-0.5 (82.3, 88.1)	-0.0 (84.0, 88.0)	0.2 (85.2, 87.8)	0.4 (86.1, 87.3)
	Reistma$_P$		-0.7 (83.6, 87.5)	-0.3 (84.5, 87.5)	-0.1 (85.2, 87.2)	-0.0 (85.9, 86.8)
5	Prop $(\hat{c}_1, \hat{c}_2)$	87.7	-4.4 (74.1, 87.8)	-2.6 (78.4, 88.2)	-0.9 (83.7, 88.8)	-0.1 (86.4, 88.6)
	Prop $(c_1 = 0)$		-3.4 (76.4, 88.4)	-1.7 (80.1, 88.7)	-0.6 (84.5, 88.9)	-0.1 (86.4, 88.6)
	Prop $(c_1 = c_2)$		-5.5 (72.6, 87.2)	-3.5 (77.6, 87.6)	-1.5 (82.9, 88.3)	-0.3 (86.1, 88.5)
	Heckman-type		-4.2 (75.7, 87.9)	-2.6 (80.3, 88.1)	-1.5 (83.6, 88.1)	-0.7 (85.9, 88.1)
	Reistma$_O$		-4.5 (73.1, 87.7)	-3.0 (77.0, 88.2)	-1.1 (83.2, 88.7)	-0.2 (86.2, 88.6)
	Reistma$_P$		-1.7 (80.9, 89.2)	-0.5 (83.8, 89.3)	-0.3 (85.5, 89.1)	0.0 (86.7, 88.5)
6	Prop $(\hat{c}_1, \hat{c}_2)$	83.5	-4.2 (70.0, 85.3)	-1.3 (75.9, 86.0)	-0.3 (79.8, 85.8)	-0.1 (82.0, 84.8)
	Prop $(c_1 = 0)$		-2.6 (73.1, 85.9)	-0.7 (77.7, 86.3)	-0.2 (80.3, 86.0)	-0.2 (82.0, 84.8)
	Prop $(c_1 = c_2)$		-4.9 (69.2, 84.9)	-2.4 (75.3, 85.3)	-0.9 (78.8, 85.4)	-0.8 (81.2, 84.3)
	Heckman-type		-3.6 (72.4, 85.4)	-1.6 (76.9, 85.9)	-0.5 (79.7, 85.7)	0.0 (81.6, 85.3)
	Reistma$_O$		-4.5 (70.1, 85.1)	-2.1 (75.5, 85.7)	-0.8 (79.2, 85.6)	-0.7 (81.4, 84.3)
	Reistma$_P$		-1.0 (76.8, 86.7)	-0.2 (79.6, 86.5)	-0.2 (80.8, 85.7)	-0.1 (82.2, 84.5)

Note:
Median with 25th empirical quartile (Q1) and 75th empirical quartile (Q3) and convergence rate (CR) are reported. No. denotes the senario numbers. S denotes the number of the population studies; True denotes the the true value of the SAUC. Prop $(hatc_1, hatc_2)$, Prop $(c_1 = 1)$, and Prop $(c_1 = c_2)$ denote the proposed method that estimates (c_1, c_2), correctly specifies $(c_1, c_2) = (0, 1)$, and misspecifies $(c_1, c_2) = (1/sqrt2, 1/sqrt2)$, respectively; Heckman-type denotes the method of Piao et al.; Reitsma$_O$ and Reitsma$_P$ denote the Reitsma model based on N observed studies and$S$ population studies, respectively. All the entries are multiplied by 100.